

ATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To

United States Patent and Trademark
Office
(Box PCT)
Crystal Plaza 2
Washington, DC 20231
ÉTATS-UNIS D'AMÉRIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 14 December 1998 (14.12.98)	in its capacity as elected Office
International application No. PCT/US97/17036	Applicant's or agent's file reference RCA 88752
International filing date (day/month/year) 23 September 1997 (23.09.97)	Priority date (day/month/year) 14 April 1997 (14.04.97)
Applicant	
HAILFAY, James, Edwin et al	

- 1. The designated Office is hereby notified of its election made:**

in the demand filed with the International Preliminary Examining Authority on:

06 November 1998 (06.11.98)

in a notice effecting later election filed with the International Bureau on:

2. The election was
 was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

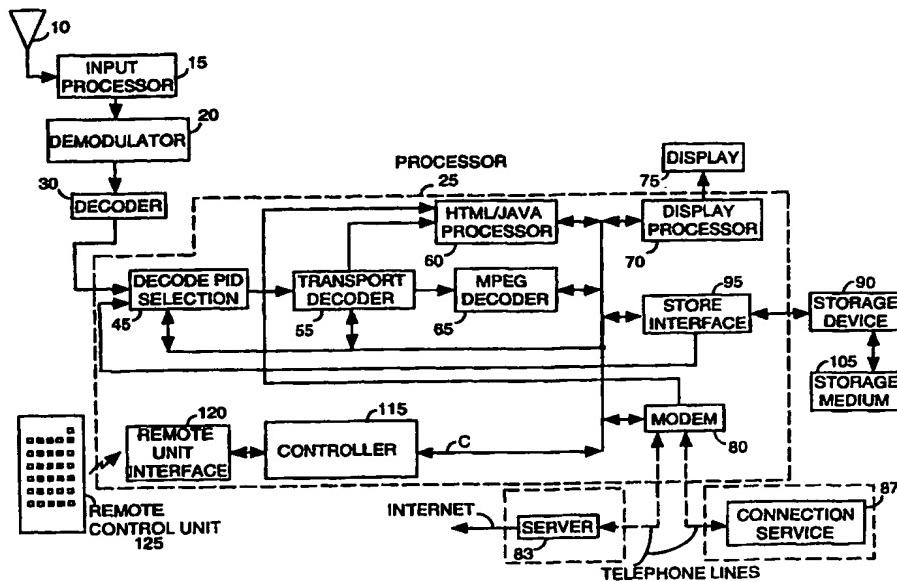
<p>The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No.: (41-22) 740.14.35</p>	<p>Authorized officer</p> <p>Ting Zhao</p> <p>Telephone No.: (41-22) 338.83.38</p>
---	--



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : H04N 7/173		A1	(11) International Publication Number: WO 98/47286
			(43) International Publication Date: 22 October 1998 (22.10.98)
<p>(21) International Application Number: PCT/US97/17036</p> <p>(22) International Filing Date: 23 September 1997 (23.09.97)</p> <p>(30) Priority Data: 60/043,539 14 April 1997 (14.04.97) US</p> <p>(71) Applicant (for all designated States except US): THOMSON CONSUMER ELECTRONICS, INC. [US/US]; 10330 North Meridian Street, Indianapolis, IN 46290-1024 (US).</p> <p>(72) Inventors; and</p> <p>(75) Inventors/Applicants (for US only): HAILEY, James, Edwin [US/US]; 7239 Creekside Lane, Indianapolis, In 46250 (US). JOHNSON, Michael, Wayne [US/US]; 7316 Cobblestone West Drive, Indianapolis, IN 46236 (US).</p> <p>(74) Agents: TRIPOLI, Joseph, S. et al.; GE And RCA Licensing Management Operation, Inc., P.O. Box 5312, Princeton, NJ 08543 (US).</p>		<p>(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).</p> <p>Published With international search report. With amended claims.</p>	

(54) Title: A SYSTEM FOR PROCESSING AND DECODING MPEG COMPATIBLE DATA AND INTERNET INFORMATION



(57) Abstract

A video decoder system decodes input video data encoded in a plurality of encoding formats. The decoder includes a first processor (65) for decoding MPEG compatible data identified by a first data identifier to provide a first decoded video output. The decoder also includes a second processor (60) for decoding data encoded in an Internet compatible data format identified by a second data identifier to provide a second decoded video output. A display processor (70) formats the first and second decoded video outputs for display as a composite video image and the proportion of the video image contributed by the first and second decoded outputs is variable.

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	ML	Mali	TR	Turkey
BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon	KR	Republic of Korea	PT	Portugal		
CN	China	KZ	Kazakhstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LI	Liechtenstein	SD	Sudan		
DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 97/17036

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 H04N7/173

According to International Patent Classification(IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 H04N G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 544 161 A (BIGHAM J. ET AL) 6 August 1996 see column 33, line 11 - column 40, line 39 see column 2, line 46 - column 7, line 47 ---	1-19
Y	US 5 481 542 A (LOGSTON G. ET AL) 2 January 1996 see column 3, line 14 - column 4, line 32 see column 19, line 60 - line 61 see column 19, line 18 - column 29, line 23 ---	1,3-7,9
Y	EP 0 723 369 A (NTEX DATACOMMUNICATIONS BV) 24 July 1996 see the whole document ---	1,3-7,9

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

3

Date of the actual completion of the international search

3 February 1998

Date of mailing of the international search report

13/02/1998

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl.
Fax: (+31-70) 340-3016

Authorized officer

Verschelden, J

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 97/17036

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 97 09827 A (NEC AUSTRALIA PTY LTD) 13 March 1997 see page 6, line 17 - page 8, line 30 see page 15, line 26 - page 20, line 15 see page 25, line 10 - page 27, line 27 ---	1-19
A	PROFFIT B.: "INTERCAST BRINGS THE WEB TO TV" PC MAGAZINE, 21 January 1997, pages 203-204, XP002053914 see the whole document ---	1,3-7,9
A	US 5 583 864 A (LIGHTFOOT R. ET AL) 10 December 1996 see column 17, line 42 - line 46 see column 34, line 46 - column 36, line 11 ---	1,2,9-12
A	WO 96 38002 A (BELLSOUTH CORPORATION) 28 November 1996 see page 22, line 7 - page 32, line 23 ---	1,3-7, 9-12
A	US 5 617 565 A (AUGENBRAUN J. ET AL) 1 April 1997 see the whole document ---	1,3-7,9
A	"ELECTRONIC PROGRAM GUIDE VIA INTERNET" RESEARCH DISCLOSURE BULLETIN, no. 38502, page 276 XP000599701 see the whole document ---	1,3-7,9, 13
A	PATENT ABSTRACTS OF JAPAN vol. 97, no. 5, 30 May 1997 & JP 09 009160 A (SONY CORPORATION), 10 January 1997, see abstract ---	1
P,X	WO 97 28499 A (AWARD SOFTWARE INTERNATIONAL INC.) 7 August 1997 see the whole document ---	1,3-7,9, 13-19
E	WO 97 41690 A (AWARD SOFTWARE INTERNATIONAL INC.) 6 November 1997 see the whole document ---	1,3-7,9, 13-19
P,X	US 5 666 487 A (GOODMAN W. ET AL) 9 September 1997 see the whole document -----	1-19

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 97/17036

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5544161 A	06-08-96	NONE	
US 5481542 A	02-01-96	AU 1087095 A BR 9408030 A CA 2176131 A CN 1134771 A EP 0728398 A JP 9505186 T WO 9513681 A	29-05-95 17-12-96 18-05-95 30-10-96 28-08-96 20-05-97 18-05-95
EP 0723369 A	24-07-96	NONE	
WO 9709827 A	13-03-97	AU 6782896 A	27-03-97
US 5583864 A	10-12-96	NONE	
WO 9638002 A	28-11-96	AU 5928596 A	11-12-96
US 5617565 A	01-04-97	NONE	
WO 9728499 A	07-08-97	NONE	
WO 9741690 A	06-11-97	NONE	
US 5666487 A	09-09-97	NONE	

PATENT COOPERATION TREATY

PCT

REC'D 20 JUL 1999
WIPO PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference RCA 88752	FOR FURTHER ACTION		See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/US97/17036	International filing date (day/month/year) 23/09/1997	Priority date (day/month/year) 14/04/1997	
International Patent Classification (IPC) or national classification and IPC H04N7/173			
Applicant THOMSON CONSUMER ELECTRONICS, INC. et al.			

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 2 sheets.

3. This report contains indications relating to the following items:

- I Basis of the report
- II Priority
- III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV Lack of unity of invention
- V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI Certain documents cited
- VII Certain defects in the international application
- VIII Certain observations on the international application

Date of submission of the demand 06/11/1998	Date of completion of this report 16.07.99
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. (+49-89) 2399-0 Tx: 523656 epmu d Fax: (+49-89) 2399-4465	Authorized officer Noll, B Telephone No. (+49-89) 2399 8700



INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/US97/17036

I. Basis of the report

1. This report has been drawn on the basis of (substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.):

Description, pages:

1.3-29 as originally filed

2.2a as received on 31/03/1999 with letter of 29/03/1999

Claims, No.:

1-19 as amended under Article 19

Drawings, sheets:

1/9-9/9 as originally filed

- ## **2 The amendments have resulted in the cancellation of:**

the description, pages:

the claims. Nos.:

the drawings, sheets:

3. This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

- #### 4 Additional observations, if necessary:

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

restricted the claims.

paid additional fees.

paid additional fees under protest.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/US97/17036

- neither restricted nor paid additional fees.
2. This Authority found that the requirement of unity of invention is not complied and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
- complied with.
- not complied with for the following reasons:
- see separate sheet**
4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:
- all parts.
- the parts relating to claims Nos. .

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims 1-17,19
	No:	Claims 18
Inventive step (IS)	Yes:	Claims 1-17,19
	No:	Claims
Industrial applicability (IA)	Yes:	Claims 1-19
	No:	Claims

2. Citations and explanations

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/US97/17036

VI. Certain documents cited

1. Certain published documents (Rule 70.10)

and / or

2. Non-written disclosures (Rule 70.9)

see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/US97/17036

To section IV:

Claims 1-17 relate to method and apparatus for decoding video data from MPEG and Internet compatible formats, formatting respective contributions to a composite image wherein the proportion of the respective contributions is variable and the data identifiers of each portion are derived from program map information associating the Internet data with video program content represented by the MPEG data.

Claims 18 and 19 relate to a method of decoding video data from an Internet compatible format, the first page providing an index of web page information and the second representing a web page selected from the index page, and formatting the selected web page for display.

The common feature of both groups of claims is that image representative data encoded in an Internet compatible data format are identified using a data identifier and decoded. This is already known from US-A-5 544 161 (hereinafter referred to as D1), see column 5, lines 10-25. The remaining features in the independent claims of each group are not suitable to establish a common inventive concept in the sense of Rule 13.1 PCT. In particular, the features mentioning the association of Internet data with video program content in claims 9 and 18 concern different purposes. In claim 9 (and 1) *both* data identifiers are derived from a program map which associates Internet data with video program content. In claim 18 it is not mentioned where the first data identifier is obtained from. The index of web page information in claim 18 is generated from data obtained using the first data identifier whereas the program map is already present in claim 9. Hence the features in claim 9 and 18 mentioning the association of Internet data with video program content are technically different.

To section V:

The invention relates to apparatus and method for decoding input video data encoded in a plurality of encoding formats.

It is known in the art (see US-A-5 544 161) to decode video data received in MPEG or an Internet compatible format identified by respective data identifiers and display a video image formed by the decoded data.

None of the available prior art discloses or renders obvious the feature that the identifi-

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/US97/17036

ers for identifying MPEG and Internet compatible data are derived from program map information associating the Internet data with video program content represented by the video output from the decoded MPEG data.

Dependent claims 2-8 and 10-17 relate to preferred embodiments of the invention. Hence claims 1-17 meet the requirements of Article 33(2)-(4) PCT.

The features of claim 18, when interpreted in the broadest form, merely describes the standard procedure according to which web pages are accessed by a user: first, a higher order page ("home" or "index page") is selected by a user by entering the corresponding home location address (which, in its broadest sense, is considered as a data identifier). Then, a desired page can be selected by clicking one of the selectable items highlighted on the first page, thus directly switching to the corresponding home location address of the desired page. These selectable items on the first page already constitute an index, i.e. they implicitly contain pointing information associated with further pages of information of arbitrary content. Hence there is already a mechanism in the prior art that links an item in the home page with an identifier for acquiring a web page selected by a user. The fact that, according to claim 18, the index of web page information is associated with *video program content* in input video data merely designates the kind of further information carried by the input data but does not establish any clear technical limitation.

To section VI:

The documents:

WO-A-97 28499 (filed 31.1.97; published 7.8.97; claimed priority 2.2.96),

WO-A-97 41690 (filed 1.5.97; published 6.11.97; claimed priority 2.5.96), and

US-A-5 666 487 (filed 18.6.97; published 9.9.97)

are considered as relevant with the present claims. It should be mentioned that their priorities and that of the present application have not been checked.

To section VII:

Claims 11 and 12 should be directed to a method instead of an apparatus.

Reference signs in parentheses should have been inserted in the claims to increase their intelligibility, Rule 6.2(b) PCT. This applies to both the preamble and characterising portion.

view a selected program and permit User operation of functions such as Email, telephone, Internet access, fax and video-phone functions. Such applications require communication between a PC/TV unit and a variety of both remote sources e.g. a satellite service provider, and local sources e.g. a DVD storage device. Further, a PC/TV needs to process and decode data in different data formats from different devices and display received data to the User. These problems are addressed by a system according to the present invention.

10

Summary of the Invention

The inventors have hereby recognized that a Program Guide type of User interface advantageously provides a simple, easy to use interface for User operation of functions such as Email, telephone, Internet access, fax, home control, and video-phone functions. The use of a Program Guide for such functions also advantageously provides a single User interface for User operation of multiple devices and associated functions.

20

The inventors have further recognized that it is desirable for a video decoder system to be capable of decoding input video data encoded in a plurality of encoding formats such as MPEG compatible and Internet compatible data formats. Further, that it is desirable for a decoder to be capable of displaying the decoded data derived from the different encoding formats e.g. decoded MPEG video program data and web page Internet data as a composite video image.

A video decoder system decodes input video data encoded in a plurality of encoding formats. The decoder includes a first processor for decoding MPEG compatible data identified by a first data identifier to provide a first decoded video output. The decoder also includes a second processor for decoding data encoded in an Internet compatible data format identified by a second data identifier to provide a second decoded video output. A display processor formats the first and second decoded video outputs for display as a composite video image and the proportion

30
CLAIMS

1. Video decoder apparatus for decoding input video data encoded in a plurality of encoding formats, comprising:
- 5 a first processor for decoding MPEG compatible data identified by a first data identifier to provide a first decoded video output;
- a second processor for decoding data encoded in an Internet compatible data format, said Internet data being 10 identified by a second data identifier to provide a second decoded video output; and
- a display processor for formatting said first and second decoded video outputs for display as a composite video image wherein
- 15 the proportion of said video image contributed by said first and second decoded outputs is variable.
2. Apparatus according to claim 1, wherein said first and second processors decode data separated 20 using said first and second data identifiers from a single composite input datastream.
3. Apparatus according to claim 1, wherein said first processor decompresses MPEG compatible 25 compressed data.
4. Apparatus according to claim 1, wherein said second processor decodes data formatted according to the TCP/IP protocol.
- 30
5. Apparatus according to claim 4, wherein said Internet compatible data format includes data encoded in at least one of a) HTML format, b) JavaTM format, and c) ActiveXTM format.
- 35

31

6. Apparatus according to claim 1, wherein
said proportion of said video image contributed by
said first decoded output is variable between 0 and 100%.

5 7. Apparatus according to claim 1, wherein
said display processor stores said composite video
image in a pixel memory.

10 8. Apparatus according to claim 1, wherein
said display processor formats said first and second
decoded outputs as separate images within said composite video
image and

15 said proportion of said composite video image
contributed by said first and second decoded outputs is variable in
response to at least one of (a) User selection, (b) formatting data
received in said input video data, and (c) pre-programmed
processor instruction.

9. A method for decoding image representative input
20 video data encoded in a plurality of encoding formats, comprising
the steps of:

identifying MPEG compatible first image
representative data;

25 identifying second image representative data encoded
in an Internet compatible data format;

decoding said first image representative data using a
first method to provide a first decoded output;

decoding said second image representative data using
a second method to provide a second decoded output; and

30 formatting said first and second decoded outputs for
display as a composite video image wherein the proportion of said
video image contributed by said first and second decoded outputs
is variable.

32

10. A method according to claim 9, further including the step of:

separating said first and second image representative data from a single composite input datastream.

5

11. Apparatus according to claim 9, including the step of

determining whether a User is authorized to access said first image representative data and wherein

10 said step of decoding said first image representative data occurs in response to said authorization.

12. Apparatus according to claim 11, including the step of

15 decrypting said first image representative data in response to said User authorization.

13. A method according to claim 9, including the steps of

20 receiving program guide information and selecting web page information for display from said received program guide information.

14. A method according to claim 9, including the step 25 of

 receiving an index of web page information and including the step of

 selecting said second image representative data from said index.

30

15. A method according to claim 9, including the step of

 decompressing MPEG compatible compressed first image representative data to provide said first decoded output.

16. A method according to claim 9, including the step
of
decoding second image representative data formatted
5 according to the TCP/IP protocol.

17. A method according to claim 9, including the step
of
varying said proportion of said video image
10 contributed by said first decoded output.

18. A method according to claim 9, including the step
of
decoding second image representative data formatted
15 in at least one of a) HTML format, b) Java™ format, and c)
ActiveX™ format.

19. A method according to claim 9, including the step
of
20 varying said proportion of said video image
contributed by said first decoded output in response to at least
one of (a) User selection, (b) formatting data received in said input
video data, and (c) pre-programmed processor instruction.